BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies	)	**ET Docket No. 92-9**

To: The Commission

THE COASTAL CORPORATION

By: Von Taylor
Director, Telecommunications

Dated: June 8, 1992

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S U M M A R Y

The Coastal Corporation ("Coastal") is a Houston-based energy holding company. Coastal operates a total of 195 private operational-fixed microwave service ("OFS") paths, located in fourteen different states. The vast majority of Coastal's microwave stations employ frequencies in the 1850-2200 MHz band.

In these Comments, Coastal urges the Federal Communications Commission to evaluate carefully the possibility of allocating spectrum other than the 1850-2200 MHz band for emerging technologies. Coastal respectfully suggests that there is an abundance of other spectrum that could successfully meet the requirements of the emerging personal communication services without jeopardizing the essential communications systems operated by entities in the oil and gas industries. Included among this alternative spectrum are frequency bands reserved for use by the Federal Government as well as the MMDS and ITFS band at 2500-2690 MHz.

The 220 MHz of non-government spectrum in the band 1850-2200 MHz which the Commission has targeted for emerging

technologies is heavily used for existing, vital telecommunications systems. Coastal does not believe it is in the public interest to disturb or relocate these systems simply to provide spectrum for rather speculative emerging technologies. In Coastal's view, the Commission has not adequately examined the feasibility of using frequency bands higher in the spectrum for these emerging technologies.

Finally, the Commission must ensure that it adopts meaningful measures to protect existing microwave licensees at 1850-2200 MHz in the event that this band is allocated for emerging technologies. These measures include identification of adequate replacement spectrum and appropriate rechannelization of this replacement spectrum, clarification of the grandfathering and interference provisions in order to ensure that there is no degradation of existing operations, and the flexibility to make reasonable modifications to grandfathered systems.

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COMMENTS OF THE COASTAL CORPORATION

The Coastal Corporation ("Coastal"), pursuant to the invitation extended by the Federal Communications Commission ("Commission") in its Notice of Proposed Rule Making ("Notice" or "NPRM")[1/] in the above-referenced proceeding, respectfully submits the following Comments for consideration by the Commission.

I. PRELIMINARY STATEMENT

1. The Coastal Corporation is a Houston-based energy holding company. Coastal has consolidated assets of $9 billion and subsidiary operations in natural gas transmission and storage, refining and marketing, oil and gas exploration and production, coal, chemicals, trucking

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1/ Notice of Proposed Rule Making (FCC 92-20), adopted January 16, 1992, summary published at 57 Fed. Reg. 5993 (February 19, 1992).

and independent power production. Coastal operates a total of 195 private operational-fixed microwave service ("OFS") paths, 174 of which use frequencies in the 1850-2200 MHz band.

2. Coastal's private microwave systems are located in fourteen different states: California, Colorado, Iowa, Illinois, Indiana, Kansas, Michigan, Missouri, Ohio, Oklahoma, Texas, Utah, Wisconsin, and Wyoming. Coastal also operates OFS systems in the Gulf of Mexico. The licenses for these systems are held by three major subsidiaries of Coastal: ANR Pipeline Company, Colorado Interstate Gas Company, and Coastal States Management Corporation. The undepreciated investment in Coastal's corporate microwave system is approximately $25 million, with the replacement costs for the entire system in present-day dollars being in excess of $32 million.

3. Coastal's microwave systems are used for supervisory control and remote operation of high pressure natural gas and petroleum crude and product pipelines. Telecommunications on these systems are used to carry telemetry signals, which reflect conditions at critical points along pipelines that traverse Coastal's areas of operation. These critical circuits are used to remotely

operate valves, pumps and compression stations, as well as to support leak detection systems. The communications transmitted at 1850-1990 MHz and 2130-2150/2180-2200 MHz are essential for the safe and efficient delivery of these types of energy sources to American industrial, commercial, and residential consumers. Further, Department of Transportation regulations require each operator of a hazardous liquid pipeline to establish communications systems designed to carry operational information and data necessary to promote safe pipeline operations. The communications links established at 1850-2200 MHz are indispensable components of Coastal's networks mandated by the U.S. Department of Transportation.

II. COMMENTS

4. The Coastal Corporation has reviewed the Notice of Proposed Rule Making in the instant proceeding and, in addition, has devoted considerable effort to review of the Office of Engineering and Technology study (OET/TS 91-1) entitled "Creating New Technology Bands for Emerging Telecommunications Technology" (hereafter referred to as "OET Study"). Coastal has also reviewed applicable relevant legislative proposals, including the "Efficient Spectrum Management Act of 1991" (H.R. 531/S.218) and the "Efficient

Spectrum Management Act of 1992" (S.2903). Based on its review of these documents and upon careful consideration of its subsidiaries' day-to-day operational requirements, Coastal is pleased to submit the following comments.

5. As a preliminary matter, Coastal notes that the Commission's Notice lists several criteria for the evaluation of alternative plans to make spectrum available to accommodate new technologies.[2/] The weighting factors applied to each of those criteria are, of course, critical to the final decisions reached by the Commission in this matter. The Coastal Corporation is vitally concerned with the economic and operational impact of the decisions which the Commission makes relating to this issue. Therefore, Coastal believes it is appropriate to apply the same criteria in its effort to identify and evaluate the most pressing concerns raised by this proceeding.

2/ On pages 5 and 6 of the Notice, the Commission states that the factors to be considered in evaluating the various spectrum alternatives include: (1) cost of equipment, (2) amount of spectrum, (3) feasibility of relocation, (4) non-government spectrum, and (5) international developments.

A. The Commission Should Examine All Potential Spectrum Alternatives, Including Spectrum Allocated For Federal Government Use and The MMDS/ITFS Spectrum.

6. Coastal recognizes the potential need for adequate radio spectrum to accommodate the development of new radio communication services. Coastal agrees also that where, as in the present situation, there is no readily available "virgin" spectrum to accommodate new services, the Commission must consider reallocating spectrum currently in use for existing services. However, large-scale clearing of frequency bands allocated for vital communications services may not be in the best interests of either the public or current licensees.

7. Based on cost of equipment, amount of spectrum, feasibility of relocation, and international developments, The Coastal Corporation believes that there are frequency bands reserved for used by the Federal Government that are currently underutilized and should be investigated as the first alternative for accommodating the needs of emerging technologies. If the FCC is not willing to wait and see if the government bands can provide additional spectrum for use by these emerging services, then Coastal believes that the 2500-2690 MHz band would be a better focus for the spectrum reserve than the 1850-2200 MHz band.

8. The 2500-2690 MHz band is allocated domestically for the Multichannel Multipoint Distribution Service ("MMDS")[3/] and the Instructional Television Fixed Service ("ITFS"). The band has similar propagation characteristics to the 1850-2200 MHz band and comparable electronic equipment manufacturing costs. Moreover, it is Coastal's considered opinion that personal communications services and other emerging technologies could be implemented more quickly in this band than under the plan offered in the Notice. Based on relevant licensing statistics, it would appear that the 2500-2690 MHz band could be cleared more quickly, and that the band-clearing process would affect less critical licensees.

9. Coastal's recommendation that the 2500-2690 MHz band should be designated as the reserve spectrum for accommodating emerging technologies is derived directly and immediately from the criteria set forth by the Commission in its NPRM. As outlined below, the 2500-2690 MHz band appears to meet all of the requirements imposed by the Commission.

3/ In relevant literature, the Multichannel Multipoint Distribution Service is sometimes referred to as "wireless cable."

a. Cost of Equipment

10. Since the 2500-2690 MHz band is below the 3 GHz ceiling identified by the FCC as a consideration, the cost of equipment development would be comparable to that of the 1850-2200 MHz band. The technical characteristics of the frequencies and performance of the equipment would be virtually identical. There would be no reason for delay in the introduction of new services using this band.

b. Amount of Spectrum

11. The 2500-2690 MHz band would allow contiguous use of 190 MHz, as compared with the three discrete frequency segments in the 1850-2200 MHz band proposed in the Notice. Combined with the government spectrum being considered for reallocation in the related House and Senate bills, the 2500-2690 MHz band would be more than adequate to satisfy the emerging technology reserve requirements at this time.

c. Feasibility of Relocation

12. From the standpoint of implementing emerging technologies, this is the most attractive feature of the 2500-2690 MHz band. The band is very lightly loaded, particularly when compared with 1850-2200 MHz. While there may be a substantial number of applications pending, relatively few have been granted and the available evidence

suggests that the number of stations actually constructed is minimal. By comparison, as demonstrated in the OET Study, there are 29,116 fixed microwave facilities in the 1850-2200 MHz band. Therefore, the 2500-2690 MHz band could be cleared more rapidly than the 1850-2200 MHz band.

13. The Commission has already concluded that existing licensees in the 1850-2200 MHz band could be accommodated in higher frequency bands.4/ In a similar way, any wireless cable and ITFS systems affected by the suggested reallocation of the 2500-2690 MHz band for emerging technologies could easily be accommodated in higher frequency bands, since the propagation characteristics of 1850-2200 MHz and 2500-2690 MHz are virtually the same. Coastal notes that the Commission has granted experimental licenses in New York City for wireless cable systems operating at frequencies as high as 28 GHz.

14. In its NPRM, the Commission argued that the 2500-2690 MHz band should be excluded from consideration for emerging technologies due to the "more than 24,000

4/ At page 9 of the NPRM, the Commission states "(t)here appears to be adequate capacity in the higher frequency bands that are allocated to fixed microwave services and can support path lengths similar to those of the existing 2 GHz fixed operations."

applications on file" for this band and the lack of alternative spectrum to accommodate existing systems and the pending applications. However, this argument ignores the fact that the Commission's proposal will require both the reallocation and rechannelization of existing bands to accommodate the 29,116 facilities licensed in the 1850-2200 MHz band. The allocation of alternative spectrum for the relatively few wireless cable licensees and ITFS systems would seem to be far less complicated that the reaccommodation actions contemplated in the NPRM.

d. Non-government Spectrum

15. The 2500-2690 MHz alternative satisfies the requirement that the spectrum to be designated for emerging technologies should not be used by the Federal Government.

e. International Developments

16. The only criterion relating to international considerations is that the emerging technologies reserve spectrum be located between 1 and 3 GHz. The 2500-2690 MHz band meets this need. Further, WARC-92 will focus on this spectrum for mobile use.

17. In general, selection of the 2500-2690 MHz band to satisfy emerging technologies would be less disruptive and

less costly than use of the 1850-2200 MHz band. As demonstrated above, with the 2500-2690 MHz band, there would be no problems in meeting each of the criteria set by the Commission. It would appear reasonable to conclude that preserving channels for private operational-fixed microwave systems needed for the safe and efficient operation of America's basic industries and governments would be more important than the inconvenience of relocating a predominantly entertainment service to another frequency band. We strongly believe that the 2500-2690 MHz band is a better home for the "reserve spectrum" required for emerging technologies.

B. The Assumptions Used In The Notice Distort The Decision-Making Process.

18. The NPRM, at paragraph 10, seems to be making a predetermined reserve spectrum allocation in which 200 MHz would come from Federal Government spectrum, pursuant to H.R. 531 and S. 218, and 220 MHz from the non-government spectrum. In reality, the 220 MHz of non-government spectrum is highly utilized with present day, existing systems. The government spectrum, by comparison, is apparently underutilized. From Coastal's perspective, it would clearly serve the public interest to structure the

proposed reallocation so as to minimize the costs and effect upon present day users.

19. The NPRM, at paragraph 12, uses the OET Study to limit the scope of the frequency bands under consideration for emerging technologies. The study makes very hasty and premature assumptions on this matter. It is common knowledge that there are several projects being pursued by private industry for mobile uses above 3 GHz. AT&T, for instance, is working on personal communications services in the higher common carrier bands. Motorola has developed wireless local area networks that operate in the band 17.7-19.7 GHz. The military services also use higher frequencies for some of their mobile applications.

20. In addition, depending on the technologies used, there may be opportunities for personal communications services at frequencies below 1 GHz. Spread spectrum and digital cellular are just two examples of such possibilities. There is also a current Notice of Inquiry (NOI) which is attempting to "re-farm" the frequencies below 470 MHz.[5/] This action may also provide a source of spectrum for emerging technologies.

5/ PR Docket No. 91-170.

21. There are, therefore, many more actions which have been or could be taken to satisfy the emerging technologies spectrum requirement outside of the 1-3 GHz range. Neither the Commission's NPRM in the instant proceeding nor the OET Study reflect these possibilities. In Coastal's view, the NPRM seems to place unwarranted weight on international considerations and minimizes the effect of other relevant criteria used in making this decision. The resulting distortion in the decision-making process clearly works to the disadvantage of existing licensees and users of the 1850-2200 MHz band.

C. The Costs, Both Tangible and Intangible, Of Reallocating The 1850-2200 MHz Band For Emerging Technologies Would Be Severe.

22. The Commission's Notice states that "creation of emerging technologies bands would . . . encourage the larger and more effective use of radio in the public interest."6/ It is Coastal's position that the reserve spectrum targeted in the Notice is being utilized effectively and in the public interest as it is currently allocated. The proposed reallocation will impose a tremendous financial and manpower burden for an unknown need. If our corporation is required

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6/ Notice, page 5.

to relocate its affected microwave systems to higher frequencies, the cost would be a minimum of $16 million. The cost could be considerably higher depending on the availability of frequencies, applicable interference criteria and possible tower structural work. The transition would also require thousands of man-hours for engineering, design and construction that would not have been necessary if only normal upgrades were being performed.

23. The NPRM, at paragraph 17, states that there are other reasonable alternatives to microwave for private communications systems. If the Commission is referring to leased fiber capacity from common carriers, it should be noted that the majority of Coastal's facilities are located in rural areas where the fiber access is either extremely limited or non-existent. As a general rule, "right-of-way" type industries, such as pipeline or power transmission companies, tend to be located in remote regions of the country where there is no need for high-capacity fiber. In such situations, private fiber is not cost-effective to install and operate due to the relatively small amount of bandwidth that is required at each facility and the distance between locations. Additionally, our prior experience with private cable systems has shown that they are susceptible to

failure along a pipeline due to pipeline failures and maintenance-related incidents.

24. Satellite systems place common carriers and private industry in a position of "limited control" over critical operational systems. The reliability of satellite technology is dependent on the frequencies employed by the system. Additionally, the cost-effectiveness of "like" services using satellite is not at all comparable to the economic efficiency of the private microwave systems currently in use.

D. If The Commission Determines That It Must Allocate The Band 1850-2200 MHz For Emerging Technologies, It Must Take Adequate and Meaningful Steps to Protect Existing Licensees.

25. If the 1850-2200 MHz band is chosen for the reserve spectrum, there are numerous issues with respect to implementation that need to be further addressed. There are a number of significant changes, clarifications, rules and regulations which must be carefully looked at before the Commission can move forward to a Report and Order. These issues were mentioned in the NPRM but not made clear in the discussion included in the text of the Commission's

document. Coastal's specific concerns in this regard are outlined below.

26. Starting with the "blanket" waiver concept of eligibility, the existing bands for common carrier and private systems must be rechannelized in order to provide for the usage of narrower band private systems. It is critical to the private industries and local governments that efforts be taken to maintain similar interference criteria and compatibility with existing systems. In addition, the separation of the services, common carrier versus private, is still mandatory due to the nature of our business goals. Common carriers are in the telecommunications business while private systems and governmental entities are providing a service to their main business. Coastal and similarly situated companies simply do not have the corporate resources as compared to common carrier staffs. Without the separation of services, there would be a built-in bias toward the common carriers in frequency acquisition, system design, and related matters. The timing and implementation of a blanket waiver must correspond to the changes suggested above.

27. Clarification is needed concerning primary/co-primary and secondary status classifications. The Coastal

Corporation believes it is imperative that private industry share in the co-primary grandfathering status offered the local and state governments. Two critical points must be adhered to in this area: sharing should be based on current interference criteria and there should be no degradation of the existing operating environments. Private systems are no less critical and the financial/operational concerns of private industries are no less urgent than those of the local and state governments. Co-primary status would also place the private industries in a better bargaining position if negotiations of financial arrangements between existing licensees and providers of new technologies are to be encouraged.

28. If secondary status, after a predetermined time period is decided upon, there still are major flaws in the Commission's proposal. Below is a listing and explanation of the various points of view that are held by The Coastal Corporation.

a. The expected life span of the radio equipment, transmission lines and antenna systems is easily 20 years.

b. Private system licensees are always trying to keep their records and systems in good shape. Therefore, when preparing for license renewals, we frequently find errors in coordinates, equipment specifications and related details. The changes necessary to correct these errors often constitute major modifications under current rules. The NPRM would place existing microwave licensees in a secondary situation well before the grandfather period with the present understanding of "new equipment." We need to be able to make data corrections without loss of primary license status. Moreover, the effective date of this action should be the date when the Report and Order is issued.

c. The period of time to move to a new frequency as a result of interference in a secondary mode or after financial negotiations must be sufficient to allow time for design, engineering, equipment acquisition and installation. As a reasonable guideline we would consider the lesser of a time mutually agreed upon or two years. The capability of manufacturers to accommodate 29,000 change-outs of equipment is in question. This could

cause a major bottleneck in the transition of these systems.

d. The buyout strategy suggested by the Commission may work in large metropolitan areas, but there will be no windfall for the private systems. Coastal urges that the compensation cover the cost of relocation for the paths under negotiation.

e. The emerging technologies may include systems which cannot co-exist with the present day licensees. Examples include low earth orbit satellites and even some personal communications services. Other methods of interference calculations do not change the actual physics of radio frequency propagation. Straight-forward measurements and calculations will not change with emerging technologies. Therefore, the exclusion of state and local governments from the relocation requirement is not believed to be a feasible mode of operation for the long-term if emerging technologies are to co-exist in the same band.

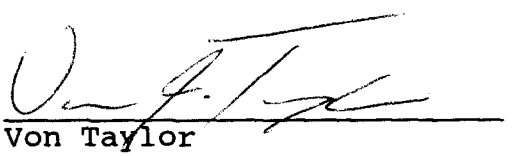
III. CONCLUSION

29. If the 1850-2200 MHz band is selected for emerging technologies, it would have an extremely severe effect on the operation of basic industries, common carriers, and state and local governments. The Coastal Corporation believes strongly there are other spectrum alternatives which would minimize the cost to affected licensees and facilitate the effort to introduce emerging technologies.

30. The relocation of some twenty-nine thousand facilities in the 1850-2200 MHz band translates into an expense of $2.75 billion expense for American industries and common carriers. Coastal believes there is a better way to promote emerging technologies, to the benefit of both existing microwave licensees and the American public. The comments provided above, it is hoped, demonstrate the existence of a better way.

WHEREFORE, THE PREMISES CONSIDERED, The Coastal Corporation urges the Federal Communications Commission to act in accord with the foregoing Comments.

Respectfully submitted,



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Dated: June 8, 1992